

## AMENDED CLAIMS

[received by the International Bureau on 17 November 1999 (17.11.99);  
original claims 1-46 replaced by amended claims 1-46 (6 pages)]

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A<sup>2</sup>
1. An agricultural composition including a combination of:
- a) a monoterpene alcohol portion including a pine oil with an alcohol content of at least 60% by weight,
  - b) a fatty acid soap from the combination of either or both of tall oil, or fatty acid compound, with an alkali metal compound,
  - c) optionally including a foam enhancing agent as defined herein, and
  - d) optionally including one or more carriers or diluents;
- the proportion of (b) fatty acid soap and (c) foam enhancing agent, in the composition, being sufficient to allow the composition to be applied as, or to produce, a foam having at least a surface monolayer of bubbles during use.
2. An agricultural composition as claimed in claim 1 in which the monoterpene alcohol portion includes pine oil having an alcohol content of at least 80%.
3. An agricultural composition as claimed in claim 2 in which substantially all of the monoterpene alcohol portion comprises pine oil.
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4. An agricultural composition as claimed in any one of the preceding claims in which the fatty acid soap is derived substantially entirely from tall oil, and in which the ratio of tall oil to pine oil used in preparing the composition is within the range of 10:80 to 25:60 by weight.
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5. An agricultural composition as claimed in any one of the preceding claims in which, excluding optional carriers and diluents, there is present at least 30% by weight of monoterpene alcohols as defined herein.
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6. An agricultural composition as claimed in any one of the preceding claims in which there is present, excluding optional components, at least 55% by weight of pine oil.
7. An agricultural composition as claimed in any one of the preceding claims, in which in addition to the pine oil the monoterpene alcohol

portion includes either or both of additional monoterpene alcohols, or plant derived oils containing same.

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8. An agricultural composition as claimed in claim 7 in which the additional monoterpene alcohols, or plant derived oils containing same, include: pinenes, terpineols, borneols, isoborneols, eucalyptus oil, citronellol, liminol, and oils from members of the citrus family.
9. An agricultural composition as claimed in any one of the preceding claims, which also includes at least one member from a group comprising: mono-cyclic monoterpene aldehydes, mono-cyclic monoterpene ketones, bridged mono-cyclic monoterpene aldehydes, bridged mono-cyclic monoterpene ketones, internally bridged monocyclic monoterpenes, unbridged monocyclic monoterpenes, and simple substituted derivatives of the foregoing.
10. An agricultural composition as claimed in claim 9 in which members of the listed group include: anethols, fenchols, members of the limonene family, members of the camphene family, members of the thujol family, dipentes, members of the eugenol family, members of the phellandrene family, and cavaracols.
11. An agricultural composition as claimed in any one of the preceding claims, in which, excluding optional components, a maximum of 35% by weight of tall oil and fatty acid soaps are present.
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12. An agricultural composition as claimed in claim 11 in which, excluding optional carriers or diluents, between 12 and 25% inclusive by weight of tall oil and fatty acid soaps derived therefrom are present.
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13. An agricultural composition as claimed in any one of the preceding claims in which, apart from optional carriers or diluents, at least 2.5% by weight of fatty acid soap is present.
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14. An agricultural composition as claimed in any one of the preceding claims in which the amount of fatty acid soap present is sufficient to produce at least monolayer of foam covering at least 60% of foliage surface area to which the composition is applied, according to a test as defined herein.

15. An agricultural composition as claimed in claim 14 in which the test is performed on any one or more of wild ginger, dock, dandelion, or scotch thistle.
16. An agricultural composition as claimed in any one of the preceding claims in which an optional carrier or diluent includes one or more of water, and water-miscible solvents.
17. An agricultural composition as claimed in any one of the preceding claims which includes one or more of the following optional components: surfactants, foaming agents, emulsifiers, pesticides, compatible fungicidal agents, fertilising components.
18. An agricultural composition as claimed in any one of the preceding claims which includes one or more of the following optional components: colourants, dyes, pigments.
19. A ready to use composition comprising an agricultural composition as claimed in any one of the preceding claims, diluted up to 1:9 with diluent comprising water.
20. The composition of claim 20 when used as a herbicide, by application to plant foliage.
21. The composition of any one of claims 1 through 19, diluted with water to a concentration below a thresh-hold in which there is significant herbicidal action, for use as a pesticide or fungicide.
22. A method of preparation of an agricultural composition which includes at least:
- a) a monoterpene alcohol portion including a pine oil with an alcohol content of at least 60% by weight, and
  - b) a fatty acid soap from the combination of either or both of tall oil, or fatty acid compound, with an alkali metal compound,
- said method including the steps of:
- i) combining the fatty acid compounds and/or tall oils with the monoterpene alcohol portion;
  - ii) dissolving an alkaline material in water;
  - iii) reacting the components of steps i) and ii).

23. The method of claim 2 when there is included at step (i), other included optional components selected from: plant derived monoterpene alcohols, plant derived oils containing same, mono-cyclic monoterpene aldehydes, mono-cyclic monoterpene ketones, bridged mono-cyclic monoterpene aldehydes, bridged mono-cyclic monoterpene ketones, internally bridged monocyclic monoterpenes, unbridged monocyclic monoterpenes, and simple substituted derivatives of the foregoing.
24. The method of either claim 22 or claim 23 in which the pine oil has a total alcohol content of at least 80% by weight.
25. The method of any one of claims 22 through 24 in which, apart from water, there is present at least 55% by weight of pine oil in steps i) through iii).
26. The method of any one of claims 22 through 25 in which substantially all the fatty acid is introduced as a tall oil from pine.
27. The method of claim 26 in which, apart from water, there is from 12 through 25% inclusive, by weight, of tall oil introduced in step (i).
28. The method of claim 22 including the steps of:
- combining a pine tall oil with a pine oil having a total alcohol content of at least 60%, the proportion of tall oil to pine oil being within the range of 10:80 through 25:60 inclusive;
  - dissolving a metal hydroxide in water;
  - combining the dissolved hydroxide with the components of step (i) and allowing to react until a soap is formed;
  - optionally including any additional components.
29. A composition prepared according to the method of any one of claims 22 through 28.
30. The use of a composition as claimed in claim 29 as a herbicide.
31. The method of any one of claims 22 through 28 when used to prepare an agricultural composition as claimed in any one of claims 1 through 21.
32. The use of a composition as claimed in any one of claims 1 through 21, or claim 29, as a selective foliar applied herbicide, said use comprising

dilution of the composition to within a range defined by observable thresholds with an upper limit being the concentration for significant or irreparable damage to desirable plants, and a lower limit being no significant damage to targetted plants.

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33. The use of claim 32, in which the upper limit is defined by 10% or more of desirable plants being killed, and the lower limit by less than 10% or more of targetted plants being killed.
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34. The use of claim 32 or claim 33 in which there are multiple applications of the composition.
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35. The use of a composition as claimed in any one of claims 1 through 21, or claim 29, as a pesticide or fungicide, said use comprising diluting the composition to below a level in which significant or irreparable damage is inflicted on desirable plants.
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36. The use of a composition as claimed in any one of claims 1 through 21, or claim 29, as a combined herbicide and either or both pesticide or fungicide, in which the composition is applied at a concentration sufficient to inflict significant or irreparable damage to targetted plants.
37. The use of claim 36 for preparing an in situ soil mulch from targetted plants.
38. The use of either claim 35 or claim 36 for pesticidal applications, in which the method of application maximises the production of foam or entrapped bubbles in the applied mixture.
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39. The use of a composition as claimed in any one of claims 31 through 36 for pesticidal or herbicidal applications, in which the composition is applied in a manner in which at least a monolayer of bubbles are formed over at least 50% of the leaf foliage surface area to which the composition is applied.
40. The use of claim 39 in which the half-life of the formed bubbles, based on a 50% drop in the original covered surface area, is at least 2 minutes.
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41. The use of claim 40 in which the half-life is at least 5 minutes.

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42. The use of claim 40 in which the half-life is at least 10 minutes.
43. The use of claim 39 in which application is by spray through a foam inducing nozzle.
44. An agricultural composition, substantially as described herein with reference to the contained examples.
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45. The use of an agricultural composition, substantially as described herein with reference to the contained examples, for herbicidal, pesticidal, and/or fungicidal applications.
46. A method for the manufacture of an agricultural composition, substantially as described herein with reference to the contained examples.
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